

Focus

Fecal coliform bacteria and Washington's water quality standards

Issue

Many streams, lakes, and marine waters in Washington are contaminated with fecal coliform bacteria. Fecal coliform is an indicator of bacterial contamination from human and other warm-blooded animals. High levels of fecal coliform in the water can affect the public health, economy, and environmental quality of a community.

What's so important about fecal coliform bacteria?

Fecal coliform are a group of bacteria found in the feces of warm-blooded animals such as people, livestock, pets, and wildlife. The amount of fecal coliform in a stream or lake increases with the amount of sewage waste and/or manure.

A long history of illness outbreaks and epidemics has demonstrated a relationship between the presence of fecal coliform bacteria and the presence of illness-causing viruses and bacteria, called pathogens. These pathogens can be accidentally swallowed with water or eaten in contaminated shellfish. People swimming or playing in water can be exposed to pathogens when they enter the body through small cuts, abrasions or mucus membranes.

Some of the symptoms of illness associated with fecal coliform pathogens are minor, such as upset stomach, diarrhea, ear infections, and rashes. However, some pathogens, such as *E coli*, hepatitis, and *Salmonella*, can have very severe health effects. Washington's water quality standard for fecal coliform bacteria is set to protect public health.

Shellfish concentrate fecal coliform and associated pathogens from the water around them. The Washington Department of Health closes or restricts harvest of commercial shellfish beds when water quality tests indicate unacceptably high levels of fecal coliform bacteria.

High levels of fecal coliform can cause other problems as well. Sewage and manure contain nitrogen and phosphorus, which act as fertilizer for algae and other aquatic plants. An overgrowth of plants can:

- deplete oxygen in the water that is needed by fish and other aquatic animals;
- affect the natural acidic/alkaline (pH) balance of water;
- interfere with recreational activities such as boating, fishing, skiing, and swimming;
- create odor problems and unpleasant views;
- affect property values.

Where does fecal coliform bacteria come from?

Fecal coliform contamination can come from sewage treatment plants or some industries. Often, it comes from many small sources, each contributing a little bit to the overall problem. Those small sources are each of us who live in the watershed, through the way we manage our on-site septic systems, livestock waste, and pet waste, or sanitary practices when we're camping and hiking. Fecal coliform bacteria are often also present from wildlife and birds. Whatever the source, as the amount of fecal coliform bacteria in water increases, the risk to public health also increases.

In order to protect the beneficial uses (like recreation) of our waterways, Washington state law provides for managing the human-caused sources. The goal is to keep the bacteria levels within a range that is safe for human health.

What can you do?

"Fixing" fecal coliform contamination means each of us looking at what we do (or don't do) on our property that allows sewage or manure to reach a waterway.

Here are some things you can do:

- Make sure your on-site septic system is in good working order. Have it tested and pumped regularly.
- Don't let livestock water directly from a stream or lake. Need help figuring out an alternative? Call your local conservation district, they can help.
- Protect the natural vegetation alongside streams and lakes, and you may need to plant more. Vegetation filters pollutants from run-off. Your conservation district can help.
- Safeguard manure piles from rain and from surface run-off.
- Bury pet waste, or bag it and put it in the garbage.
- When camping or hiking, bury waste away from water and at least six inches deep.
- When RV camping, dump your holding tanks at an approved dumping station.

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